



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/080,485

02/21/2002

Carl D. McCrosky

034456148

8468

7590

11/17/2005

Robert E. Krebs
THELEN REID & PRIEST
P.O. Box 640640
SAN JOSE, CA 95164-0640

EXAMINER

PHILPOTT, JUSTIN M

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/080,485

Applicant(s)

MCCROSKY ET AL.

Examiner

Justin M. Philpott

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 10 is/are rejected.
- 7) ☒ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>20020730</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Canada on February 21, 2001. It is noted, however, that applicant has not filed a certified copy of the Canadian 2,337,642 application as required by 35 U.S.C. 119(b).

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 10, 20, 22, 30, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 72, 74, 76, 78, 80, 82, 84, 108, 119, 120, 122, 130 and 132. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 4 and 5 are objected to because of the following informalities: "PBRS sequences" (claim 4, line 3; claim 5, line 5) should be changed to "pseudo random bit sequences (PBRS) sequences"; and "an SPE payload" (claim 5, line 3) should be changed to "an a synchronous payload envelope (SPE) payload". Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,804,316 to Sheckman in view of U.S. Patent No. 5,923,653 to Denton in view of U.S. Patent No. 4,967,405 to Upp et al. in view of U.S. Patent No. 6,359,859 to Brolin et al.

Regarding claim 1, Sheckman teaches an interface device for connecting SONET/SDH termination devices with payload processing devices, comprising: (a) a receive module (e.g., frame recover system 10, see FIG. 1 and col. 2, line 66 – col. 3, line 28) operative to receive incoming SONET/SDH signal streams (e.g., see col. 11, lines 1-16), to recover bit boundaries (e.g., see col. 5, line 38 – col. 6, line 49 regarding identifying the first bit of words), and to recover byte and frame alignment by SONET/SDH A1/A2 frame delineation to find both byte and frame boundaries (e.g., see col. 5, line 38 – col. 6, line 49 and col. 10, lines 20-49 regarding eight-bit word boundaries with respect to A1s and A2s, and also byte alignment and frame

Art Unit: 2665

demarcation/ demultiplexing). However, while Sheckman also teaches that scrambling of an STS signal at a transmit module is well known in the art (e.g., see col. 1, line 18 – col. 2, line 7), and specifically teaches a descrambler 126 (e.g., see col. 10, lines 20-67) is utilized in the invention at a receive module to account for the scrambling of the SONET/SDH signals from a transmit module, the teachings of Sheckman are directed primarily towards the receive module and may not specifically disclose a particular transmit module for scrambling.

Denton, like Sheckman, also teaches a SONET/SDH interface, and specifically teaches a particular transmit module for scrambling (e.g., scrambler 84, see FIG. 9). Further, Denton teaches that the transmit module (e.g., comprising scrambler 84) is operative to scramble STS-48 to a scramble STS-12 (e.g., see col. 6, line 57 – col. 7, line 11). Additionally, the teachings of Denton provide improved section and line overhead termination for SONET (e.g., see col. 2, line 21 – col. 3, line 45), as well as provide a specific embodiment (e.g., scrambler 84, see col. 6, line 57 – col. 7, line 11) for achieving scrambling of an STS signal as required in Sheckman. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the SONET/SDH teachings of Denton to the SONET/SDH interface of Sheckman in order to provide improved section and line overhead termination for SONET/SDH as well as provide a specific embodiment for achieving scrambling of an STS signal as required in Sheckman. However, Sheckman in view of Denton may not specifically disclose the transmit module scrambles an STS-51 signal in addition to the STS-48 to a scramble STS-12.

Upp, like Sheckman and Denton, also teaches a SONET/SDH interface, and specifically teaches scrambling two different STS-N signals (e.g., STS-24 and STS-12) to yield another STS-N signal (e.g., STS-3) (e.g., see col. 6, lines 28-40). Further, the teachings of Upp provide an

Art Unit: 2665

improvement in SONET/SDH interfaces whereby a plurality of different rate STS signals can be accommodated on a common path for enhanced flexibility (e.g., see col. 1, line 1 – col. 5, line 4). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the SONET/SDH interface teachings of Upp to the SONET/SDH interface of Sheckman in view of Denton in order to accommodate a plurality of different rate STS signals on a common path for enhanced flexibility. Additionally, while Upp may not specifically disclose the two different scrambled STS signals are specifically STS-51 and STS-48 to yield a scrambled STS-12, but rather, discloses a particular embodiment with STS-24 and STS-12 to yield a scrambled STS-3, it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on Appellant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to implement the STS-24/STS-12/STS-3 scrambling teachings of Upp in a STS-51/STS-48/STS-12 configuration since it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. However, Sheckman in view of Denton in view of Upp may not specifically disclose the SONET/SDH streams are converted into LVDS levels for transmission.

Brolin, like Sheckman, Denton and Upp, also teaches improvements for SONET/SDH (e.g., see abstract). Further, Brolin teaches that serialized SONET/SDH streams are converted into low voltage differential signal (LVDS) levels for transmission (e.g., see col. 4, line 63 – col. 5, line 10 and col. 12, lines 49-60). Also, the teachings of Brolin provide a scalable SONET/SDH interface for accommodating a plurality of configurations (e.g., see col. 4, line 38 – col. 6, line 27), and also provide a specific method of transmission for the SONET/SDH streams of Sheckman in view of Denton in view of Upp. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the SONET/SDH interface teachings of Brolin to the SONET/SDH interface of Sheckman in view of Denton in view of Upp in order to provide a scalable SONET/SDH interface for accommodating a plurality of configurations and also provide a specific method of transmission for the SONET/SDH streams of Sheckman in view of Denton in view of Upp.

Regarding claims 2 and 3, Denton teaches scrambled encoding for STS-12 at 622.08 Mbps and STS-48 at 2488.32 Mbps (e.g., see col. 1, line 21 – col. 3, line 16). Also, as discussed above, the teachings of Denton provide improved section and line overhead termination for SONET (e.g., see col. 2, line 21 – col. 3, line 45), as well as provide a specific embodiment (e.g., scrambler 84, see col. 6, line 57 – col. 7, line 11) for achieving scrambling of an STS signal as required in Sheckman. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the SONET/SDH teachings of Denton to the SONET/SDH interface of Sheckman in order to provide improved section and line overhead termination for SONET/SDH as well as provide a specific embodiment for achieving scrambling of an STS signal as required in Sheckman. Further, while it may not be specifically disclosed by the above-

Art Unit: 2665

cited prior art, Examiner takes official notice that STS-51 has a rate of 2643.84Mbps and that 8B/10B encoding is well known in the art for encoding STS-12 to yield a rate of 777.6 Mbps. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to implement 8B/10B encoding to achieve a rate of 777.6 Mbps since such an implementation is well known in the art and it would have been obvious to one of ordinary skill in the art to implement STS-51 at a rate of 2643.84 Mbps since such an implementation is also well known in the art.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sheckman in view of Denton in view of Upp in view of Brolin, further in view of U.S. Patent No. 5,774,242 to O'Sullivan et al.

Regarding claim 4, Sheckman in view of Denton in view of Upp in view of Brolin teach the interface discussed above regarding claim 1, however, may not specifically disclose testing links by inserting and checking pseudo random bit sequences (PRBS). However, O'Sullivan, like the above-mentioned prior art, also teaches a method for optical transmission, and specifically, teaches testing links by inserting and checking PRBS (e.g., see col. 3, lines 18-28). Also, the teachings of O'Sullivan provide improved determination of the quality of transmission in more complex optical systems than permitted by other prior art (e.g., see col. 3, lines 29-40). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the optical communications teachings of O'Sullivan to the optical interface of Sheckman in view of Denton in view of Upp in view of Brolin in order to provide improved determination of the quality of transmission in more complex optical systems than permitted by other prior art.

Art Unit: 2665

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sheckman in view of Denton in view of Upp in view of Brolin, further in view of U.S. Patent No. 5,455,832 to Bowmaster.

Regarding claim 5, Sheckman in view of Denton in view of Upp in view of Brolin teach the interface discussed above regarding claim 1, however, may not specifically disclose individually testing a synchronous payload envelope (SPE) of a largest concatenated STS-Nc carried by the link by inserting and checking PRBS. However, Bowmaster, like the above-mentioned prior art, also teaches a method for improving optical communications, and specifically, teachings testing an SPE of a largest concatenated STS-Nc carried by the link by inserting and checking PRBS (e.g., see col. 14, line 53 – col. 15, line 4 regarding generating a test signal and testing an SPE; see also col. 4, lines 45-57 and col. 6, lines 45-58 regarding concatenation and STS-Nc). Also, the teachings of Bowmaster provide improvements in optical communications by determining network elements conform to particular criteria or standards (e.g., see col. 13, lines 48-51). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the optical communication teachings of Bowmaster to the optical communication interface of Sheckman in view of Denton in view of Upp in view of Brolin in order to provide improvements in optical communications by determining network elements conform to particular criteria or standards.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sheckman in view of Denton in view of Upp in view of Brolin, further in view of U.S. Patent No. 6,778,778 to Richards et al.

Regarding claim 10, Sheckman in view of Denton in view of Upp in view of Brolin teach the interface discussed above regarding claim 1, however, may not specifically disclose diagnostic line testing by inserting B1 errors at a transmit module and checking them at a receive module. However, Richards, like the above-mentioned prior art, teaches improvements for optical communications, and specifically, teaches diagnostic line testing by inserting B1 errors at a transmit module and checking them at a receive module (e.g., see col. 4, lines 33-65). Also, the teachings of Richards provide improved optical communications by enabling a user to test devices from a cross-country distance (e.g., see col. 3, lines 38-42). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the optical communications teachings of Richards to the optical communications interface of Sheckman in view of Denton in view of Upp in view of Brolin in order to provide improved optical communications by enabling a user to test devices from a cross-country distance.

Allowable Subject Matter

9. Claims 6-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: claim 6 recites the receive module in the interface of claim 1 comprises multiple receivers and the interface is operative to find mutual frame alignment of SONET/SDH frames on the receivers, wherein such a particular limitation was not found in a search of related prior art.

Art Unit: 2665

Claims 7-9 depend upon claim 6 and, thus, comprise allowable subject matter for the same reasons discussed above regarding claim 6.

Conclusion

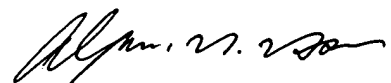
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,820,159 to Mok et al., and particularly, by inventors common to the instant application, discloses a SONET/SDH interface.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M. Philpott whose telephone number is 571.272.3162. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on 571.272.3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Justin M Philpott



ALPUS H. HSU
PRIMARY EXAMINER